

## Besluit

### Besluit strekkende tot het verlenen van accreditatie aan de opleiding wo-master Operations Management and Logistics van de Technische Universiteit Eindhoven

	<b>Gegevens</b>	
datum	31 augustus 2017	Naam instelling : Technische Universiteit Eindhoven
onderwerp	Besluit	Naam opleiding : wo-master
accreditatie wo-master	Operations Management and Logistics van de Technische Universiteit Eindhoven (005701)	Operations Management and Logistics (120 EC)
uw kenmerk	CvB 2017/1649225	Datum aanvraag : 1 mei 2017
ons kenmerk	NVAO/20172180/ND	Variant opleiding : voltijd
bijlagen	2	Afstudeerrichtingen : Healthcare; Capital goods; Consumer goods; Service operations; Transportation; Free track
		Locatie opleiding : Eindhoven
		Datum goedkeuren panel : 10 oktober 2017
		Datum locatiebezoeken : 18 en 19 januari en 20 februari 2017
		Datum visitatierapport : 18 april 2017
		Instellingstoets kwaliteitszorg : ja, positief besluit van 6 mei 2014

#### Beoordelingskader

Beoordelingskader voor de beperkte opleidingsbeoordeling van de NVAO (Stcrt. 2014, nr 36791).

#### Bevindingen

De NVAO stelt vast dat in het visitatierapport deugdelijk en kenbaar is gemotiveerd op welke gronden het panel de kwaliteit van de opleiding goed heeft bevonden.

#### Advies van het visitatiepanel

Samenvatting bevindingen en overwegingen van het panel.

'The master's programme Operations Management and Logistics (hereafter: OML) is a full time programme, consisting of 120 EC spread evenly over two years. It is taught in English. OML is part of the School of Industrial Engineering (hereafter: School IE) with the bachelor's programme Technische bedrijfskunde (Industrial Engineering and Management in English) and the master's programme Innovation Management, as offered by the Department of

Pagina 2 van 7 Industrial Engineering and Innovation Sciences at the Eindhoven University of Technology (hereafter: TU/e). The Educational Board of the School IE consists of a programme director, a vice-director, and two programme chairs. It is supported by a quality assurance officer and two study advisors.

OML focuses on logistics and operational processes and applied engineering techniques. The programme's profile is clearly distinct from the School IE's other master's programme Innovation Management. The panel considers the profile and aims of the programme in line with the demands of the field and appropriate for the domain of IE&IS. It suggests rendering the programme's international ambitions in both its profile and the intended learning outcomes to further strengthen and demarcate its, and the School IE's, position in the field of IE&IS.

The panel ascertained that the programme's profile and mission have been appropriately translated into programme- and domain-specific learning outcomes. OML's intended learning outcomes are appropriate for a programme at master's level and meet both the requirements of the Dublin criteria and the ACQA framework, which is based on the Meijer's criteria for academic curricula as developed by the Dutch Universities of Technology. Therefore they meet both international standards and the demands of the work field in the domain of IE&IS. Whereas the panel considered the learning outcomes in the domain-specific framework too generic, it considered the translation of these learning outcomes in the OML programme of the TU/e sufficiently operational.

OML is one of two of the School IE's master's programmes. Its programme and curriculum design was completely revised to fit the newly created TU/e Graduate School, which introduced a uniform format for all TU/e master's programmes based on a structure of 15 EC per quartile in order to facilitate alignment between different tracks, programs and departments. The programme and curriculum are based on six elements that feed into their design: two core courses (10 EC), four track specific core courses (20 EC), a minimum of three elective courses in one of the tracks allowing for disciplinary specialisation within OML (a minimum of 15 EC), a maximum of eight elective courses (a maximum of 40 EC), a literature review to prepare for the master's thesis (5 EC) and a master's thesis project, including a preparatory research proposal (30 EC). The programme is scheduled in such a way that students have in the first and second quartile of year two ample opportunity to follow electives away from the TU/e, preferably abroad.

The panel verified that the student learning environment at the master's programme OML enables students to meet the intended learning outcomes. The OML programme and curriculum is embedded in the School IE's research interests, but also provides a master's programme with its own profile. The curriculum offers five distinctive tracks for further specialisation within the field and, giving master students the opportunity to more extensively focus on research or to combine degrees. The coherence and content of the programme is well-structured and based on up-to-date scientific research and embedded within an engineering context, reflecting OML's focus on strategic decisions and business processes within a specific application domain or industry branch. In addition, the programme benefits from a wide variety in excellence programmes offered by the School IE and the university. The five specialisation tracks offer plenty of opportunity for gaining expertise within the discipline while also creating an individual profile. The internationalisation programme of OML is extensive and ambitious, and functions well. In the panel's eyes, the programme OML lays a good foundation for students of the

Pagina 3 van 7 programme to do well on the job market and in academia upon graduation. The wide availability of appropriate tracks and specialisation-related courses is, in the panel's eyes, an asset of the TU/e OML programme and translate in well-educated engineers with diverse profiles for an equally diverse work field.

The programme benefits from a dedicated teaching staff that regularly aligns its courses, and also acts upon feedback from students, colleagues and management. The panel appreciates the staff's proactive attitude regarding the challenges posed by the new curriculum and programme design and the increased workload in response to the increased student intake in the School IE since 2012. The School IE is currently suffering a high staff-to-student ratio and as a result, staff is pressed for research time. The panel has verified that the programme management is aware of this problem and that it is taking adequate measures to address the matter. Continuous vigilance in this matter is, however, necessary and the panel advises the management to continue addressing their current student-to-staff ratio.

Notable improvement regarding the professionalisation and reflection skills of the staff have been recognised by the panel, and it advises the management to continue doing so. The panel ascertained in meetings with the programme management and academic staff that both have a proactive and problem-solving attitude towards problems within the current programme. Staff and management regularly discuss the curriculum in formal and informal meetings with all relevant stakeholders. The panel considers the used methods (tutorials, group and individual assignments and lectures) appropriate, but feels that the OML staff may consider experimenting with innovative approaches such as blended learning.

Some courses were met with particular appreciation. The panel considered the core course 'Research Methods' well-designed and hands on and, in combination with the well-laid out thesis manual and the compulsory 'Literature Review', an excellent preparation for the master's thesis project both methodically and scientifically. The development of students' professional skills is organised on an individual basis, supervised by the students' mentors. Although the panel appreciated the centrality of the professional skills in the TU/e Graduate School's set up, its highly personal and individualised set up demands continuous evaluation of both students' and mentors' performance.

The panel ascertained that OML students are ambitious and driven; it appreciated the enthusiasm of students for the new curriculum. The programme also manages to successfully prepare its students to meet the intended learning outcomes. The internationalisation programme of OML is extensive and ambitious, and functions well. A high number of students take parts of their studies abroad, which the panel considers both desirable and praiseworthy. With a wide variety of options, a well-functioning homologation and internationalisation programme and a professional and innovative staff, OML's teaching-learning environment offers a good environment for students to achieve the intended learning outcomes.

The panel established that the master's programme OML has a satisfactory assessment system. The quality of assessment and achieved learning outcomes is safeguarded. Examinations are drafted with the involvement of two members of staff, and marked by two independent examiners. The quality of assessment of the master thesis is assured by the involvement of three members of staff: two supervisors and an independent assessor that assures the engineering aspect and disciplinary focus of the thesis project. The BoE's aims

Pagina 4 van 7 to develop test matrices for the different programmes in the school, an ambition warmly supported by the panel. Some other improvement could be considered. The panel recommends to redesign the thesis assessment forms for further qualitative feedback and additional transparency into the composition of grades. Furthermore, separate forms for all examiners would fuel further transparency into the assessment process. The panel advises the BoE to also consider introducing spot checks by independent educationalists in order to annually screen (a selection of) individual courses, including its assessment, within the programme to further assure the quality of assessment.

The Board of Examiners (hereafter: BoE) of the School IE functions within the constraints of the law. It regularly convenes with the management and informs both students and staff about assessment procedures and assures the quality of assessment throughout the programme. The BoE's MSc thesis assessment committee is bound to perform stratified spot checks of the BEP. This is appreciated and deemed necessary by the panel to safeguard the quality of assessment. Therefore, the panel concluded that the BoE at OML is in control and has various instruments in place to guarantee a fair assessment of all assessments, including the master thesis project.

The panel learned that a course assessment committee has been introduced to perform spot checks, both proactively and reactively, on course assessments in December 2016. Although the panel could not verify the benefits of this measure yet, it warmly supports it. Adequate time allowances should be allocated to staff members performing this important task. The panel advises the BoE to also consider introducing spot checks by independent educationalists in order to annually screen (a selection of) individual courses in its totality to further assure the quality of the programme.

All graduates of the master's programme OML achieved the intended learning outcomes and performed on average good, based on the quality of their theses. The panel ascertained that all theses were adequately graded. They consider the level of achievement on average high, showing good research embedded in an engineering context. The panel established that some of the evaluated theses demonstrated excellent research, benefiting from a good theoretical and mathematical basis with an eye for innovative research topics with societal relevance. Master graduates easily enter the job market, on which their profile and skills are highly valued. Although the School IE has an established alumni organisation in place, the panel advises the programme to intensify its ties with its alumni and to strongly support Alumnia's initiatives.'

Ingevolge het bepaalde in artikel 5a.10, derde lid, van de WHW heeft de NVAO het college van bestuur van de Technische Universiteit Eindhoven te Eindhoven in de gelegenheid gesteld zijn zienswijze op het voornemen tot besluit van 10 juli 2017 naar voren te brengen. Van deze gelegenheid heeft het college van bestuur geen gebruik gemaakt.

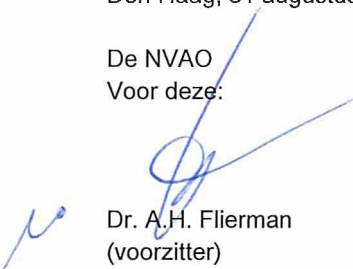
De NVAO besluit accreditatie te verlenen aan de wo-master Operations Management and Logistics (120 EC; variant: voltijd; locatie: Eindhoven) van de Technische Universiteit Eindhoven te Eindhoven. De opleiding kent de volgende afstudeerrichtingen: Healthcare; Capital goods; Consumer goods; Service operations; Transportation; Free track. De NVAO beoordeelt de kwaliteit van de opleiding als goed.

Dit besluit treedt in werking op 31 augustus 2017 en is van kracht tot en met 30 augustus 2023

Den Haag, 31 augustus 2017

De NVAO  
Voor deze:

**Dr. Marc Luwel**  
**Bestuurder**

  
Dr. A.H. Flierman  
(voorzitter)

Tegen dit besluit kan op grond van het bepaalde in de Algemene wet bestuursrecht door een belanghebbende bezwaar worden gemaakt bij de NVAO. De termijn voor het indienen van bezwaar bedraagt zes weken.

Onderwerp	Standaard	Beoordeling door het panel
<b>1. Beoogde eindkwalificaties</b>	De beoogde eindkwalificaties van de opleiding zijn wat betreft inhoud, niveau en oriëntatie geconcretiseerd en voldoen aan internationale eisen.	<b>Voldoende</b>
<b>2. Onderwijsleeromgeving</b>	Het programma, het personeel en de opleidingsspecifieke voorzieningen maken het voor de instromende studenten mogelijk de beoogde eindkwalificaties te realiseren.	<b>Goed</b>
<b>3. Toetsing</b>	De opleiding beschikt over een adequaat systeem van toetsing.	<b>Voldoende</b>
<b>4. Gerealiseerde eindkwalificaties</b>	De opleiding toont aan dat de beoogde eindkwalificaties worden gerealiseerd.	<b>Goed</b>
<b>Eindoordeel</b>		<b>Goed</b>

De standaarden krijgen het oordeel onvoldoende, voldoende, goed of excellent. Het eindoordeel over de opleiding als geheel wordt op dezelfde schaal gegeven.

- Prof.dr.ir. R.E.C.M. (Rob) van der Heijden, is since June 2016 Professor in Innovative Planning Methods within the Nijmegen School of Management, Radboud University Nijmegen [chair];
- Prof.dr. H.M.C. (Harrie) Eijkelhof, was until his retirement in 2014 Director of the Freudenthal Institute for Science and Mathematics Education at the Faculty of Science at Utrecht University;
- Prof.dr. E. (Erik) Demeulemeester, is since 2001 Full Professor at the Faculty of Economics and Business and Head of the Research Center for Operations Management at the University of Leuven;
- Prof.dr. J. (Jan) Kratzer, is Chair of Entrepreneurship and Innovation Management and Managing Director of the Center for Entrepreneurship at Berlin Institute of Technology, Germany;
- S. (Sofie) Vreriks BSc, is in her second year of her master Industrial Engineering and Management at the University of Twente [student member].

Het panel werd ondersteund door dr. E. (Els) Schröder, secretaris (gecertificeerd).